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HOMESICKNESS, MOOD AND SELF-REPORTED HEALTH

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SUMMARY

The present study focused on health status, mood, cognition, saliva cortisol, and social activities in homesick ($N = 80$), homesick-prone ($N = 152$), recovered ($N = 48$) and non-homesick adult women ($N = 45$). Self-reported health and mood were decreased and cognitive functions were poorer in homesick and homesick-prone subjects compared with non-homesick and recovered persons. Cortisol levels, on the other hand, failed to differ among the four groups. Furthermore, homesick, homesick-prone and recovered individuals reported more difficulties making friends, fear of heights, dislike of travelling alone, school phobia and less club membership in childhood compared to the non-homesick. It is suggested that a personality-linked vulnerability factor is responsible for making anxious individuals prone to develop homesickness. Copyright © 1999 John Wiley & Sons, Ltd.

KEY WORDS — cognitive failures; health status; homesickness; mood; saliva cortisol

Separation from home has been acknowledged to be a significant stressor linked to somatic health problems, including deficiencies in the immune system¹ and leukaemia,² as well as psychological problems, for example depression.^{1–5} A common phenomenon in those who have left home is homesickness.^{1,3–6} Homesick persons report feelings of unhappiness, being physically unwell, anxiousness and depression (see Van Tilburg *et al.*⁷). On the basis of several studies among university students and student nurses, Fisher⁸ concluded that homesick subjects are more likely to report psychoneurotic symptoms (even before the move), absent-mindedness and somatic symptoms than their non-homesick counterparts. These results led Fisher to hypothesize that homesickness might be a specific form of post-traumatic stress disorder. Both the loss of the old environment and the lack of control in a demanding new environment might cause homesickness. In this view, homesickness is a distressing experience which creates increased risk of physical and mental ill health.

It is unfortunate that the scarce psychological studies on homesickness are rather limited to

specific groups like conscripts,^{9–11} migrant populations and refugees,^{12–16} non-resident students, student nurses, boarding school children,^{8,17–25} and institutionalized people.²⁶ To our knowledge, there has not yet been an investigation of homesickness in those who are 'homesick-prone', i.e. those who do not suffer from homesickness at the moment, but who anticipate that they will develop homesickness when they have to leave their familiar surroundings temporarily or permanently. Is this group also at risk of developing (mental) ill health in their home surroundings, or only when in a real homesickness situation? Raised levels of psychoneurotic symptoms and decreased mood have been found in those who are prone to homesickness before a planned leave from home.^{8,27} But does this also hold when these people are not intending to leave home?

Furthermore, to our knowledge there has been only one study on homesickness which included, besides subjective distress measures, a biochemical stress marker such as cortisol,²⁷ a hormone believed to be indicative of stress. In that multiple case study, no relationship between morning and evening cortisol levels and homesickness was found.

The present exploratory study focused upon physical and mental health problems, cognitive failures and cortisol levels associated with home-

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sickness in a more general sample. Four groups were distinguished: (i) persons who are currently in a long-lasting or chronic homesickness situation, for instance due to a permanent move; (ii) homesick-prone individuals, who feel comfortable in their living situation but have had homesickness experiences previously and who expect to develop acute homesickness when they have to leave their house, for instance due to a holiday or a move; (iii) persons who have had homesickness experiences in the past but consider themselves to be fully recovered; and (iv) persons who have never experienced homesickness (non-homesick). This study explores the correlates of homesickness over a wide range of homesick(-prone) and non-homesick persons.

METHODS

Subjects

Subjects were 325 females, who were recruited through women's magazines and newspaper announcements in which volunteers were asked to participate in a study on homesickness. As very few non-homesick subjects responded, separate announcements were placed in order to recruit non-homesick subjects. Age varied from 18 to 79 years ($M = 42.4$, $SD = 13.4$). Seventy-eight percent of the respondents were married or had a stable relationship. Approximately 80 percent of the sample had the minimum of a high school education; the remaining 20 percent had had only basic education.

Subjects were assigned to one of four groups on the basis of their own estimate of which group they fitted into best, i.e. subjects defined themselves as either chronic homesick ($N = 80$), homesick-prone ($N = 152$), recovered ($N = 48$) or non-homesick ($N = 45$). These four groups did not differ in age, marital status and educational level. Three years later the chronic homesick were approached again. A total of 39 persons (49 percent) returned the second questionnaire.

Measures

The Hopkins Symptom Checklist (HSCL)²⁸ was administered to rate somatic (somatization scale) and psychological subjective health status (psychological complaints scale). The reliability and validity of the HSCL and the two subscales is good.²⁸

In order to assess mood states, the shortened version of the Dutch Profile of Mood States (POMS)^{29,30} was used, containing the following subscales: depression, anger, vigor, tension and fatigue. Cronbach's alpha for these scales ranges from 0.82 to 0.91 and the validity of the questionnaire is good.²⁹

Self-reported failures in perception, memory and motor function were measured with the Cognitive Failure Questionnaire (CFQ).³¹ CFQ scores are reasonably stable and correlate with measures of deficit in memory, absent-mindedness and slips of action.³¹ The HSCL, POMS and CFQ had to be completed with reference to the previous couple of weeks.

The chronic homesick were asked to rate their homesickness intensity on a 10-point scale. Three years later the chronic homesick were approached again and were asked to rate their present homesickness intensity as well as, retrospectively, the intensity of homesickness 3 years previously.

In a subgroup of 57 participants (18 chronic homesick, 28 homesick-prone and 11 non-homesick), saliva cortisol was measured as an indication of biological changes that might occur during a homesickness experience. Saliva samples were obtained using the Salivette sampling device (Sarstedt, Germany) as described by Hellhammer *et al.*³² The saliva samples for the determination of cortisol were taken in the morning (between 8.00 and 8.30 am) and in the evening (between 10.30 and 11.00 pm on a quiet evening, i.e. not after a quarrel, a sports game or a scary movie). The subjects had to chew gently on the cotton swab for about 1 minute to stimulate saliva flow. The samples, together with the questionnaires, were returned by mail. Cortisol analyses were performed with a time-resolved fluorescence immunoassay. This assay has a lower detection limit of 8.6 pg/well (95 percent confidence interval).

Finally, participants were asked about youth experiences, social activities, fear of heights, travel sickness and demographic variables.

RESULTS

One-way ANOVAs with Scheffé *post hoc* tests were performed to test the between-groups differences on the HSCL, CFQ, POMS scales and cortisol levels (see Tables 1 and 2). For the HSCL the following results were found. Scores on all HSCL scales differed significantly among groups. Post hoc

Table 1 — Means of POMS, HSCL and CFQ scale scores

	Chronic homesick M	Homesick-prone M	Recovered homesick M	Non-homesick M	F-value
HSCL					
Total	112.11	104.53	96.62	75.69	19.12‡
Physical health	13.35	21.16	12.50	10.60	17.34‡
Psychological health	34.54	37.57	29.06	22.78	5.00†
CFQ	91.77	88.25	83.38	78.98	5.56‡
POMS					
Depression	17.30	12.37	10.21	9.75	21.40‡
Anger	14.50	12.27	10.42	9.76	8.90‡
Vigor	14.72	14.74	15.98	16.63	2.84*
Tension	14.68	12.69	10.02	8.75	17.41‡
Fatigue	13.38	12.00	11.49	9.93	3.58*

* $p \leq 0.05$; † $p \leq 0.01$; ‡ $p \leq 0.001$. HSCL, Hopkins Symptom Checklist;²⁸ CFQ, Cognitive Failure Questionnaire;³¹ POMS, Profile of Mood States.²⁹

Table 2 — Means of morning and evening cortisol

	Chronic homesick		Homesick-prone		Non-homesick		F-test
	M	SD	M	SD	M	SD	
Cortisol							
Morning	24.70	13.86	19.60	10.77	19.50	9.65	NS
Evening	9.00	22.82	6.88	18.54	11.23	29.45	NS

tests showed that HSCL Total scores of all groups differed significantly from each other, except for the homesick-prone and recovered homesick. Psychological health subscale scores differed significantly between all groups except between the homesick-prone and recovered homesick and between the recovered and non-homesick. Scores on the physical health subscale were significantly higher for the chronic and homesick-prone compared to the non-homesick. The same between-groups differences were found on the CFQ. The chronic homesick and homesick-prone had higher CFQ scores than the non-homesick and recovered individuals. Analysis of the POMS subscales yielded the following results. The overall test was significant for all scales. Scheffé tests, however, did not reveal any difference between groups for the vigor subscale. Neither were there any significant differences on the other POMS subscales between the recovered and non-homesick groups. Compared to the non-homesick: (i) the chronic homesick scored significantly higher on all subscales except vigor, and (ii) the homesick-prone had elevated scores on all scales except vigor and fatigue. Furthermore, scores for the chronic home-

sick were significantly raised compared to the other two homesickness groups on the depression scale. In addition, scores on anger and tension of the chronic homesick were also elevated compared with the recovered persons. The homesick-prone showed significant raised scores on tension compared to the recovered persons. Analyses of the cortisol data revealed no significant differences between the groups.

In addition, mean HSCL scores per group were compared to norm scores of an adult Dutch sample reported in the Dutch HSCL manual.²⁸ The chronic and homesick-prone scored high to very high on all (sub)scales. The recovered homesick also scored high on the total score and the somatization subscale, and above average on the psychological complaints subscale. For the non-homesick, only the mean on somatization was high compared to the norm scores; on the other two scales, scores were average.

One-way ANOVAs with Scheffé *post hoc* tests and chi-square tests for ordinal variables were used to analyse the data on youth experiences, social activities, fear of heights, travel sickness and demographic variables (see Table 3). It appeared

Table 3 — Means and percentages of youth experiences, social activities, fear of heights, travel sickness and demographic variables

Item (response alternatives)	Chronic homesick	Homesick- prone	Recovered homesick	Non- homesick	Chi ² -test
	% yes	% yes	% yes	% yes	
Are you a member of a club? (yes/no)	81.3	81.5	72.9	86.7	NS
Were you a member of a club as a child? (yes/no)	53.5	59.3	61.1	75.8	*
Would you enjoy going on a holiday unaccompanied by family or friends? (yes/no)	21.1	6.8	18.5	34.8	***
Do you suffer from travel sickness? (yes/no)	43.8	45.9	41.7	26.7	NS
Did you suffer from travel sickness as a child? (yes/no/don't know)	42.6	40.7	31.2	23.4	NS
Do you suffer from fear of heights? (yes/no)	52.3	50.6	53.7	27.3	**
Did you suffer from fear of heights as a child? (yes/no/don't know)	33.8	28.0	22.9	15.6	**
Did you suffer from school phobia as a child? (yes/no/don't know)	26.7	39.9	37.0	1.5	***
Does your mother suffer from homesickness? (yes/no/don't know)	26.0	23.1	20.5	4.9	NS
Does your father suffer from homesickness? (yes/no/don't know)	8.7	15.6	6.7	7.3	NS
As a child did you ever spend more than 1 week outside your family? (yes/no)	73.8	58.0	66.7	64.4	NS
As a child did you ever go on a holiday without your parents? (yes/no)	53.8	50.3	55.3	66.7	NS
	m	m	m	m	F-test/ Chi ² -test
How many good friends do you have besides your partner?	4.58	3.97	2.85	3.84	NS
How many good friends do you know from primary school?	1.71	1.03	0.40	2.59	NS
How many friends did you have as a child?	3.22	2.86	2.98	3.55	NS
Is making new friends difficult for you? (three-point Likert scale)	1.99	2.01	2.13	2.32	*
How old were you when you had your first romantic relationship which lasted for at least 1 year?	18.31	19.58	18.43	18.80	NS
How often did you stay over or go on a vacation as a child? (1 = more than three times per year, 2 = 1–2 per year, 3 = once in 2–3 years, 4 = 1–2 in 5 years or less, 5 = never)	2.34	2.59	2.63	2.00	**
How often did you go out when you were old enough? (1 = several times a week, 2 = once a week, 3 = once or twice per half year, 4 = once or twice per year, 5 = never)	2.39	2.59	2.38	2.36	NS
How often do you: (four-point Likert scale)					
Go out?	1.90	1.80	1.96	2.22	**
Work out/athletics	2.03	2.07	2.26	2.18	NS
Meet friends	2.75	2.84	2.92	2.87	NS
Stay at home (without visitors)	3.29	3.38	3.33	3.31	NS
How pleasant to you is: (seven-point Likert scale)					
Going out	5.69	5.08	5.17	5.94	**
Working out/athletics	4.64	4.78	5.20	5.36	NS
Meeting friends	6.30	6.24	6.33	6.28	NS
Staying at home (without visitors)	5.85	6.36	6.35	6.23	*

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

that the chronic and homesick-prone groups both reported significantly more difficulties in making new friends than the non-homesick. In addition, the homesick-prone reported significantly less often going out, more dislike of going out and fewer vacations/stayovers as a child than the non-homesick. Furthermore, the homesick-prone also liked to stay home significantly more than the chronic homesick. Significantly more persons in the chronic homesick, homesick-prone and recovered homesick groups, compared with the non-homesick, suffered from school phobia and fear of heights as an adult and as a child. Significantly fewer persons in the homesick groups, compared with the non-homesick, liked to go on a holiday unaccompanied and were members of a club in childhood.

Three years later, 51 percent of the chronic homesick still experienced homesickness ($N = 20$). The feeling of homesickness had changed for 70 percent, predominantly in frequency and intensity. In 60 percent of the cases, there was a decrease of at least one point on a 10-point scale measure of homesickness intensity. Those who were no longer homesick (49 percent, $N = 19$) reported having been homesick for 1–25 years (mean = 6.6, median = 5, modus = 2.5). In 74 percent of the cases, the homesickness disappeared because of a move back home.

Current retrospective estimates of the intensity of homesickness 3 years previously on a 10-point scale were subtracted from the scores on the same scale administered 3 years previously. It appeared that, on average, there was a minor underrating of the homesickness intensity in the past ($M = 0.11$). There were more people who overrated their homesickness (36 percent) compared to those who underrated (30.6 percent); however, the underrating was higher (1–6 points) than the overrating (1–3 points). This is probably due to a ceiling effect, since mean homesickness intensity 3 years previously was 7.95. A *t*-test revealed that there was no difference in homesickness intensity 3 years previously between those who recovered and those who were still homesick. As only half of the chronic homesick participated in the study 3 years later, these results must be accepted with some caution as the sample might be severely biased.

DISCUSSION

The results of this study show that homesickness is associated with lowered mood, health complaints

and cognitive failures. Remarkably, this result did not only apply to those currently in a chronic homesickness situation, but also to the 'homesick-prone'. This might be regarded as evidence supporting a personal or circumstantial vulnerability factor as suggested by Fisher.⁸ This author found levels of depression, somatization and obsession to be raised in potentially homesick students even *before* the move to university. Since our group of homesick-prone individuals were not measured prior to a transition to a new environment, these results suggest that the distress is not causally linked to an expected transition, but rather to a stable personality feature. Thus, the vulnerability seems to be rooted in the personality of the homesick(-prone). In several studies (see for an overview Eurelings-Bontekoe³³) it has been found that homesickness is especially related to *rigidity*. Rigid persons will not only feel distressed when they leave a familiar surrounding and have to adapt to different routines and norms in a new environment, but will probably also experience distress in their home environment because of the daily confrontation with situations demanding adjustment. Whereas most people will not even notice such minor changes, severely rigid people expend an enormous amount of effort in coping with these changes, which renders them distressed. Anxiousness and distress might not only lead to lowered mood and more physical ailments, but also to cognitive failures. Both homesick and homesick-prone individuals seem to be preoccupied with worries and are not able to concentrate as well as the non-homesick. They are more vulnerable to failures in perception, memory and motor function.

Homesickness, whether chronic, prone or recovered, was also related to more difficulties in making new friends, fear of heights, dislike of travelling alone, less membership of a club in childhood and school phobia. These outcomes correspond to the results of Eurelings-Bontekoe *et al.*,¹¹ who found that homesick conscripts, from an early age onwards, were characterized by, among other things, avoidance of dating and going out, fewer or shorter vacations without parents or alone, problems with separation from parents and a strong emotional bond with parents. Fisher⁸ also found anxiety, measured after a move to university, to be related to homesickness. However, anxiety measured prior to the move did not distinguish between homesick-vulnerables and the non-homesick. In addition, in an exploratory case study

among individuals who reportedly experience homesickness during a holiday, it was found that homesick-prone individuals fear the transition, much like the fear-of-fear cognitions in phobias, especially agoraphobia.²⁷ It could be concluded from the above that higher levels of anxiety might make individuals more vulnerable to homesickness.

In the present study, subjective distress was elevated in both the chronic homesick and the homesick-prone, but there was no clear association with cortisol levels. Although cortisol is traditionally assumed to be indicative of stress, especially in acute stressful situations which are perceived as being uncontrollable (for a discussion of the literature see Vingerhoets³⁴ and Vingerhoets and Van Heck³⁵), the relation between stress symptoms and cortisol plasma levels appears not to be as unequivocal as is generally assumed. For example, it has been found that cortisol levels are sometimes not associated with self-reported complaints; in situations of chronic stressors it was even been observed that cortisol production decreases.^{35,36}

A 3-year follow-up study revealed that the prospects for a spontaneous recovery from chronic homesickness are not good. Only 12.5 percent of the chronic homesick persons reported being free of homesickness complaints due to adaptational efforts or time passing by. Another 37.5 percent were recovered due to a move back to the old home environment. On the other hand, the data of the group of individuals who reportedly recovered from previous homesickness (recovered homesickness group) suggested that they did not seem to be negatively affected any more. However, one should consider how many of this group recovered from childhood homesickness instead of adult homesickness. Those who participated in the 3-year follow up all suffered from adult homesickness. These findings thus suggest that the prospects for recovering from childhood homesickness might be much better than for adult homesickness. However, future longitudinal studies are needed for more definite answers to these questions.

Retrospective estimates of homesickness 3 years earlier showed that about one-third overestimated, one-third underestimated and one-third made an exact estimation of their homesickness intensity 3 years previously. As there was only a slight underestimation, most individuals were able to give a pretty good estimate of their homesickness in the past. This might indicate that individuals can imagine pretty well how they felt during that time, which is a promising result for future retrospective

research on homesickness. These results should be interpreted and generalized with caution, however. From the original sample, only 49 percent participated in the follow-up. The attrition rate was thus quite high, perhaps resulting in a biased sample.

In conclusion, the present data suggest that negative mood, ill health complaints and absent-mindedness associated with homesickness are not limited to a transitional period. It does not matter whether one is currently in a homesickness situation or not. Those who are vulnerable to homesickness show decreased levels of mental and physical well-being as well, compared to those who are not homesick. The present study did, however, depend to a large degree on self-reported measures. The only objective measure of 'distress', saliva cortisol, did not reveal any significant differences among the groups. It still has to be established to what extent these findings reflect on attribution process, i.e., negative feelings after a move might be attributed to the move, although that is not the real cause of these feelings. Alternatively, it can be hypothesized that homesickness is a consequence of an underlying syndrome which manifests itself also in other syndromes, like ill health. For instance, in a number of studies a positive relation has been found between neuroticism and homesickness.^{11,37,38} In a study among Dutch adults, neuroticism was the best predictor of homesickness.¹¹ Are the distress symptoms found in the homesick-prone due to a neurotic personality style? It is important for future research to untangle some of these issues. In addition, a sample of men should be included in future research in order to increase the generalizability of the results.

REFERENCES

1. Schmitz, P. G. Immigrant mental health and physical health. *Psychol. Develop. Soc.* 1992; **4**: 117–131.
2. Jacobs, T. J. and Charles, E. Life events and the occurrence of cancer in children. *Psychosom. Med.* 1980; **42**: 11–23.
3. Ekblad, S. Psychosocial adaptation of children while housed in a Swedish refugee camp: Aftermath of the collapse of Yugoslavia. *Stress Med.* 1993; **9**: 159–166.
4. Leff, M. J., Roatch, J. F. and Bunney, W. E. Environmental factors preceding the onset of severe depressions. *Psychiatry* 1970; **33**: 293–311.

5. Weissman, M. M. and Paykel, E. S. Moving and depression in women. In: *Loneliness: The Experience of Emotional and Social Isolation*. Weiss, R. S. (Ed.) MIT Press, Cambridge, MA, 1973; pp. 154–164.
6. Brown, G. W. and Harris, T. O. *Life Events and Illness*. Guilford Press, New York, 1989.
7. Van Tilburg, M. A. L., Vingerhoets, A. J. J. M. and Van Heck, G. L. Homesickness: A review of the literature. *Psychol. Med.* 1996; **26**: 899–912.
8. Fisher, S. *Homesickness, Cognition and Health*. Erlbaum, London, 1989.
9. Bergsma, J. Militair heimwee [Homesickness in the army]. Unpublished doctoral dissertation, Groningen University, Groningen, The Netherlands, 1963.
10. Dijkstra, S. J. and Hendrix, M. J. J. L. Heimwee, een verkenning [Homesickness, an exploration]. *De Psycholoog* 1983; **18**: 3–10.
11. Eurelings-Bontekoe, E. H. M., Vingerhoets, A. J. J. M. and Fontijn, T. Personality and behavioral antecedents of homesickness. *Person. Individ. Diff.* 1994; **16**: 229–235.
12. Eisenbruch, M. Cultural bereavement and homesickness. In: *On the Move: The Psychology of Transition and Change*. Fisher, S. and Cooper, C. L. (Eds), Wiley, Chichester; 1990, pp. 191–206.
13. Hertz, D. G. Identity — lost and found: Patterns of migration and psychological and psychosocial adjustment of migrants. *Acta Psychiatr. Scand.* 1988; **78** (344, Suppl.), 159–165.
14. Hojat, M. and Herman, M. W. Adjustment and psychological problems of Iranian and Filipino physicians in the US. *J. Clin. Psychol.* 1985; **41**: 131–136.
15. Larbig, W., Xenakis, C. and Onishi, M. S. Psychosomatische Symptome und funktionelle Beschwerden bei Arbeitnehmern im Ausland — Japaner und Griechen in Deutschland, Deutsche im Ausland [Psychosomatic and functional symptoms of Japanese and Greeks in Germany, and Germans in foreign countries]. *Z. Psychosom. Med. Psychoanal.* 1979; **25**: 49–63.
16. Schmitz, P. G. Acculturation and adaptation processes among immigrants in Germany. In: *Journeys Into Cross-Cultural Psychology: Selected Papers from the Eleventh International Conference of the International Association for Cross-Cultural Psychology*. Bouvy, M., Van de Vijver, F. J. R., Boski, P. and Schmitz, P. (Eds), Swets & Zeitlinger, Lisse, 1994, pp. 142–157.
17. Brewin, C. R., Furnham, A. and Howes, M. Demographic and psychological determinants of homesickness and confiding among students. *Brit. J. Psychol.* 1989; **80**: 467–477.
18. Carden, A. I. and Feicht, R. Homesickness among American and Turkish college students. *J. Cross-Cult. Psychol.* 1991; **22**: 418–428.
19. Fisher, S., Frazer, N. and Murray, K. The transition from home to boarding school: A diary-style analysis of the problems and worries of boarding school pupils. *J. Env. Psychol.* 1984; **4**: 211–221.
20. Fisher, S., Frazer, N. and Murray, K. Homesickness and health in boarding school children. *J. Env. Psychol.* 1986; **6**: 35–37.
21. Fisher, S. and Hood, B. The stress of the transition to the university: A longitudinal study of psychological disturbance, absent-mindedness and vulnerability to homesickness. *Brit. J. Psychol.* 1987; **78**: 425–441.
22. Fisher, S. and Hood, B. Vulnerability factors in the transition to university: Self-reported mobility history and sex differences as factors in psychological disturbance. *Brit. J. Psychol.* 1988; **79**: 309–320.
23. Fisher, S., Murray, K. and Frazer, N. Homesickness, health, and efficiency in first-year students. *J. Env. Psychol.* 1985; **5**: 181–195.
24. Miller, D. F. and Harwell, D. J. International students at an American university: Health problems and status. *J. School Health* 1983; **1**: 45–49.
25. Porritt, D. and Taylor, D. An exploration of homesickness among student nurses. *Austral. NZ J. Psychiat.* 1981; **15**: 57–62.
26. Taylor, R. E. Homesickness, melancholy and blind rehabilitation. *J. Visual Impairment Blindness* 1986; **80**: 800–802.
27. Van Tilburg, M. A. L., Vingerhoets, A. J. J. M., Kirschbaum, C. and Van Heck, G. L. Mood changes in homesick persons during a holiday trip: A multiple case study. *Psychother. Psychosom.* 1996; **65**: 91–96.
28. Luteijn, F., Hamel, L. F., Bouwman, T. K. and Kok, A. R. *Hopkins Symptom Checklist*. Swets & Zeitlinger, Lisse, 1984.
29. Wald, F. D. M. and Mellenbergh, G. J. De verkorte versie van de Nederlandse vertaling van de Profile of Mood States (POMS) [The shortened version of the Dutch translation of the Profile of Mood States (POMS)]. *Ned. Tijdschr. Psy.* 1990; **45**: 86–90.
30. Goldstein, A. J. and Chambless, D. L. A reanalysis of agoraphobia. *Behav. Ther.* 1978; **9**: 47–59.
31. Broadbent, D. E., Cooper, P. F., Fitzgerald, P. and Parkes, K. R. The Cognitive Failure Questionnaire (CFQ) and its correlates. *Brit. J. Clin. Psychol.* 1982; **21**: 1–16.
32. Hellhammer, D. H., Kirschbaum, C. and Belkien, L. Measurement of salivary cortisol under psychological stimulation. In: *Advanced Methods in Psychobiology*. Hingtgen, J. N., Hellhammer, D. H. and Huppmann, G. (Eds), Hogrefe, Toronto, 1987, pp. 281–289.
33. Eurelings-Bontekoe, E. H. M. Homesickness, personality and personality disorders: An overview and therapeutic considerations. In: *Psychological Aspects of Geographical Moves: Homesickness and Acculturation Stress*. Van Tilburg, M. A. L. and Vingerhoets, A. J. J. M. (Eds), Tilburg University Press, Tilburg, 1997, pp. 197–212.

34. Vingerhoets, A. J. J. M. *Psychosocial Stress: An Experimental Approach: Life Events, Coping and Psychobiological Functioning*. Swets & Zeitlinger, Lisse, 1985.
35. Vingerhoets, A. J. J. M. and Van Heck, G. L. The psychobiological aspects of stress and emotions: Some alternative views. In: *Experimental Research in Psychosomatics*. Hentschel, U. and Eurelings-Bontekoe, E. H. M. (Eds), DSWO Press, Leiden, 1993, pp. 19–36.
36. Vingerhoets, A., Ratliff-Crain, J., Jabaaij, L., Tilders, F., Moleman, P. and Menges, L. J. Self-reported stressors, symptoms complaints, and psychobiological functioning II: Psychoneuroendocrine variables. *J. Psychosom. Res.* 1996; **40**: 191–203.
37. Gasselsberger, K. Depressionsfördernde soziale und territoriale Faktoren von Heimweh-Reaktion [Depression-promoting social and territorial factors of homesickness reactions]. *Zeitschr. Klin. Psychol. Forsch. Praxis* 1982; **11**: 186–200.
38. Voolstra, A. Heimwee en persoonlijkheid [Homesickness and personality]. Unpublished Master's Thesis, Tilburg University, Tilburg, The Netherlands, 1992.